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FINAL
RESOURCE CONSERVATION AND RECOVERY ACT
FACILITY ASSESSMENT

900 ACRES OF STATE-LEASED LAND

HANFORD FEDERAL FACILITY
RICHLAND, WASHINGTON

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460



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Date: 2-16-93

☐ This report requires revision based on comments provided by EPA

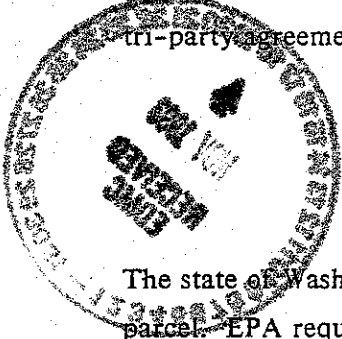
☒ This report is approved as the final RFA report

1.0 INTRODUCTION

This report presents the results of a Resource Conservation and Recovery Act (RCRA) facility assessment (RFA) on a 900-acre tract of land within the Hanford Federal Facility near Richland, Washington. This is the last of four RFA reports on the Hanford Federal Facility for work assignment R10058 under the Technical Enforcement Support 12 contract.

The 900-acre tract is part of a 1,000-acre parcel leased to the state of Washington by the Department of Energy (DOE). The land was originally leased to the state (executed September 11, 1964) to encourage widespread participation in the development and use of sources of ionizing radiation and other forms of nuclear energy for peaceful purposes (DOE 1992a). The remaining 100 acres is sub-leased by the state to US Ecology, Inc. for use as a low-level radioactive waste disposal facility. An RFA on the US Ecology facility was completed by PRC Environmental Management, Inc. (1992) under work assignment R10057. The balance of the Hanford Federal Facility is under the authority of the *Hanford Federal Facility Agreement and Consent Order*, or tri-party agreement (TPA) (Ecology et al. 1990).

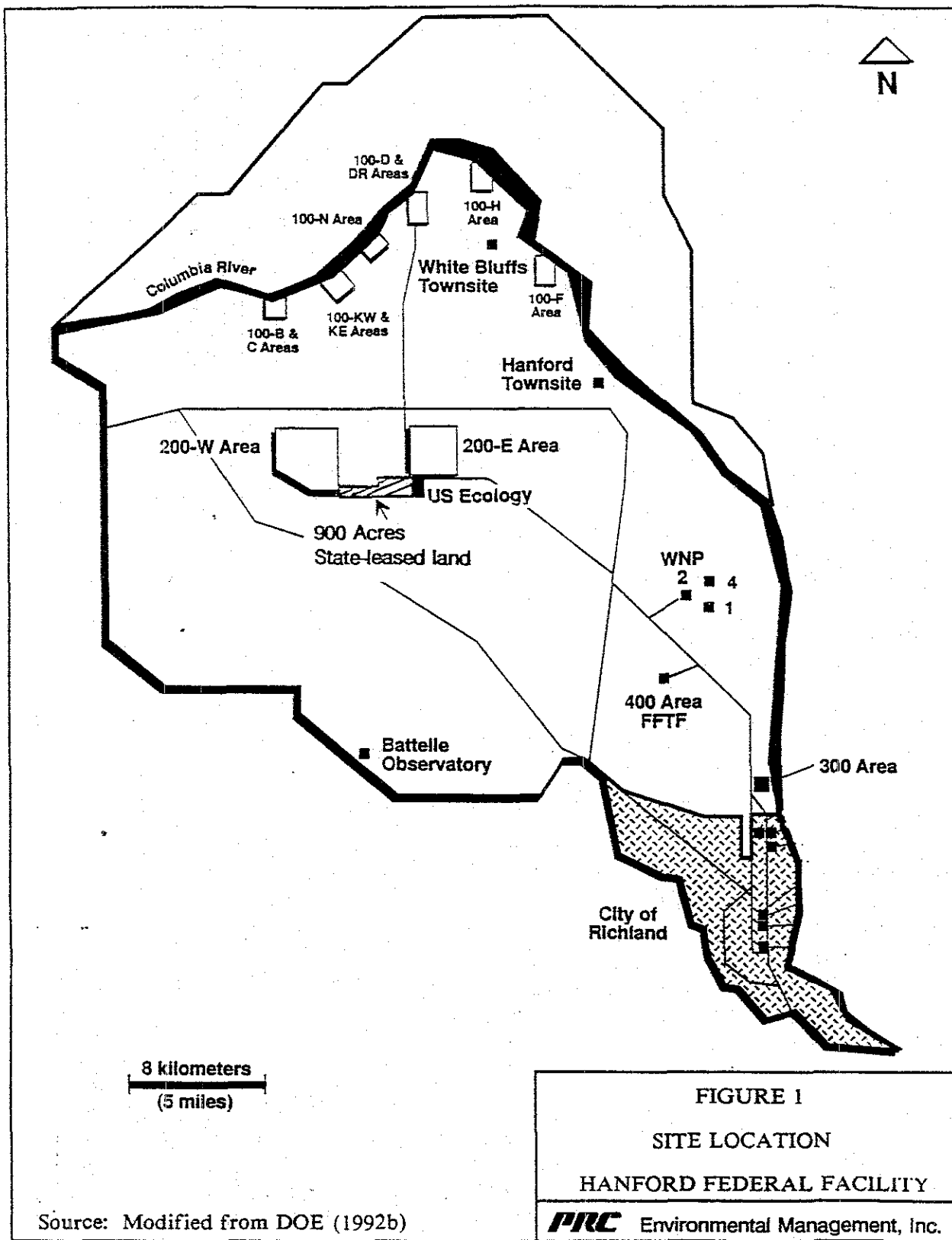
2.0 METHODS

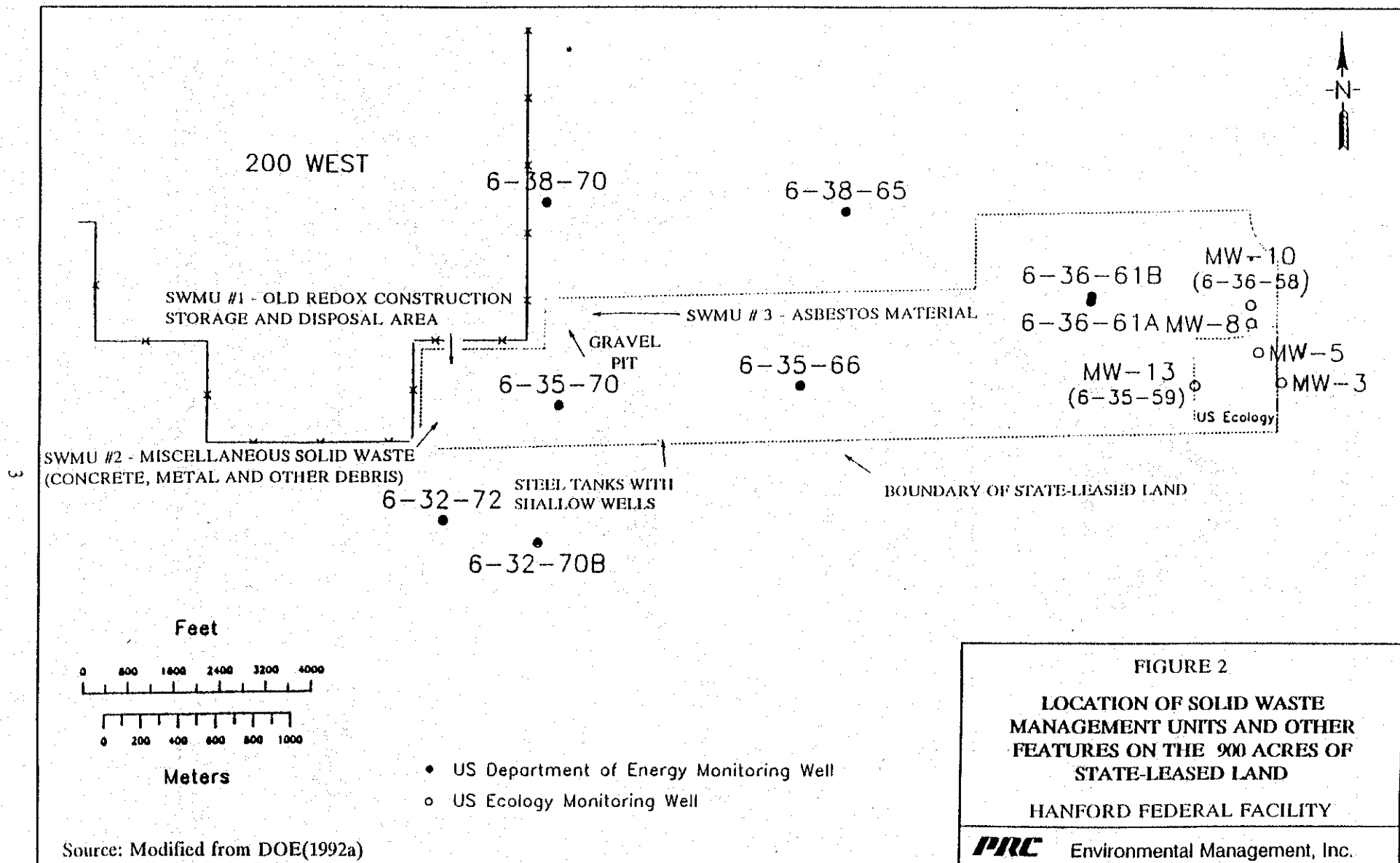


The state of Washington and DOE were notified by EPA that an RFA was being conducted on this parcel. EPA requested information on solid waste management units (SWMUs) within the 900-acre tract. To date, no additional information regarding use of this parcel from 1964 to the present has been obtained from the state of Washington. DOE responded to EPA's information request on December 30, 1992. The following section discusses the information provided by DOE (1992a) regarding use of this parcel prior to 1964.

3.0 SUMMARY OF SITE USE

In 1943, the United States government acquired the land now known as the Hanford Federal Facility, including the 900-acre tract (Figure 1). In early 1950, the U.S. government began construction of the Reduction-Oxidation (REDOX) plant in the 200-West area near the 900-acre tract (Figure 2). A construction storage, heavy equipment vehicle parking and maintenance,





concrete truck washdown area, and a waste disposal area associated with the REDOX plant construction were located in the western and southwestern portion of the 900-acre tract (Figure 2).

Likely waste disposal during the 2-year construction period included trash burning (evident from photographs provided by DOE), acid "pickling" (metal preparation) wastes, cooling water from heliarc welding operations (into a French drain), and sandblasting wastes. Other possible contaminants disposed of in this area include gasoline, oils, other lubricants, anti-freeze, and other vehicle-related fluids. The exact locations of the French drain and other disposal units were not provided by DOE.

A recent reconnaissance of the area by DOE representatives led to the discovery of clearly discernable solid waste on the surface and near-surface in the western and southwestern portions of the tract. This waste consisted of broken pieces of concrete, parts of the metal frames of filters used to sample airborne particulates (used in the 1950s to monitor particles released from the REDOX stack), barrels (content, if any, and numbers not described), and other miscellaneous debris.

The reconnaissance team also discovered three aboveground steel tanks (approximately 6 feet in diameter and 3 feet high) located near the southern boundary of the tract (Figure 2). Each tank has two threaded openings (one at each end) and is adjacent to shallow wells. The DOE report suggests that the configuration of the wells and tanks is appropriate for an infiltration test. While the use of the tanks and wells for infiltration tests is a possibility, the report does not identify the type of liquid (waste or otherwise) that might have been used in such tests.

A gravel pit is located in the northwest corner of the tract (Figure 2). Information on the dates of operation of this pit was not provided, but it was likely used during construction of the REDOX plant. A surface-level, friable asbestos disposal site is located north of the gravel pit at the far northwestern corner of the 900-acre tract (Figure 2).

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the DOE report reviewed, there are three SWMUs on the 900-acre tract, each are associated with land uses by DOE prior to execution of the lease in 1964.

SWMU number 1 is located on the old REDOX construction storage and disposal area. Releases to surface soils from 1950 to 1952 are likely. However, no further action is recommended at this SWMU due to the low volumes of solid waste disposed, duration of use, age of the unit, and proximity to extensive groundwater contamination resulting from other sources (see below).

SWMU number 2, in west and southwest portion of the tract, contains solid waste composed of concrete, metal, and other miscellaneous debris. No further action is recommended at this SWMU.

SWMU number 3 consists of asbestos material near the gravel pit located in the northwest corner of the tract. No further action is recommended under RCRA since asbestos is not a hazardous constituent under 40 CFR Part 261, Appendix VIII.

The area containing the tanks and shallow wells located in the southern portion of the tract was likely used for infiltration tests. The wells are not near production facilities that generated waste; therefore, their use for large scale waste disposal is unlikely.

There are six groundwater monitoring wells within the tract and six other wells near the tract (two belong to US Ecology). At least one or more of the six on-site wells shows regulatory exceedances of carbon tetrachloride, iodine-124, tritium, coliform bacteria, and iron. Nitrate and technetium-99 plumes also lie below the tract. These plumes have migrated from the 200 West area and are not associated with sources within the tract (DOE 1992c). There is no surface water flowing through or adjacent to the 900-acre tract.

During the early 1950s, airborne particles of ruthenium 103/106 were deposited on the 900-acre tract from the REDOX stack. Process modifications and better filtration methods were instituted at the REDOX plant in the mid-1950s, which virtually halted the emissions. The half-lives of ruthenium 103 and 106 are 40 days and 1 year, respectively (GE 1989); therefore, any radioactive particles would have decayed to negligible levels by now.

5.0 REFERENCES

DOE 1992a. Hanford Federal Facility, State of Washington Leased Land, Hanford Facility, Richland Washington. U.S. Department of Energy; Richland Field Office. December 1992.

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GE 1989. Nuclides and Isotopes. Fourteenth edition. General Electric Company, Nuclear Energy Operations; San Jose, California.

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